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(Richard J. Botos)

Alexandria, VA 22313-1450.

Dated: April 23, 2007

Docket No.: AGERE 3.0-005 (PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of: Eizenhoefer et al.

Application No.: 09/356,260

Filed: July 16, 1999

Confirmation No.: 7579

Art Unit: 2123

For: METHOD AND SYSTEM FOR SIGNALLING Examiner: K. Thangavelu

TRANSMITTAL OF APPELLANT'S REPLY BRIEF

MS Appeal Brief - Patents Commissioner for Patents P.O. Box 1450 'Alexandria, VA 22313-1450

Dear Sir:

Transmitted herewith is Appellant's Reply Brief in this application. The Reply Brief is in response to the Examiner's Answer. No fee is due at this time as the required fee under 37 CFR 41.20(b)(2) accompanied the original brief submitted on May 15, 2006. However, if it is determined that a fee is due, authorization to charge Deposit Account No. 12-1095 Appellant's are not filing a Request for Oral is granted. Hearing herewith.

Dated: April 23, 2007

Respectfully submitted,

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Docket No.: AGERE 3.0-005 PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

(Richard J. Botos)

In re Patent Application of: Eizenhoefer et al.

Application No.: 09/356,260

Filed: July 16, 1999

APR 2 6 700

Group Art Unit: 2123

: Examiner: K. Thangavelu

For: METHOD AND SYSTEM FOR SIGNALLING

APPELLANT'S REPLY BRIEF UNDER 37 C.F.R. §41.41

This reply brief is submitted in response to the Examiner's Answer dated February 21, 2007. Specifically, the Appellants respond to the Examiner's arguments with the comments provided hereinbelow. Appellants have used the numbering in the Examiner's Answer in this reply thereto, to leave no question regarding the specific point in the Examiner's Answer to which Appellants are responding and to make it clear that the Appellants raise no new issues, nor introduce new evidence, in this Reply.

I. Appellants' Reply to the Examiner's Answer Regarding Rejection Of Claims 20-22, 25, 29 And 32-34 Under 35 U.S.C. § 103(a) As Being Obvious Over U.S. Patent No. 6,418,558 To Roberts et al. ("Roberts et al.") In View Of U.S. Patent No. 6,014,374 To Paneth et al. ("Faneth et al.")

10.1.1 In the Examiner's Answer, the Examiner takes the position that Roberts et al. "teaches that control information of the second type is partitioned among consecutive frames and transmitted." Although the Examiner acknowledges that "Roberts et al. does not expressly teach control information comprising a code word" the Examiner nevertheless contends that Roberts et al. teaches the claimed step of: "partitioning the second type of control information into a number of sections."

While the Examiner explains at some length the disclosure of *Roberts et al.*, and specifically, how, in the Examiner's view the ninth bit signaling (NBS) is the claimed second type of control information, left unanswered by the Examiner's argument

is, if the NBS does not constitute a code word, how can it be partitioned in the manner required by the claim? In the context of claim 25 the code word is partitioned (i.e., divided) and transmitted in the following form: ". . . transmitting with each frame of the plurality of consecutive data frames in the multi a section of the partitioned second type of control Appellants respectfully observe that this transmission strategy is neither taught or suggest by Roberts

The Examiner argues: "the ninth bit signaling (NBS) carries a pattern which is updated each frame and repeats every 24 frames." Appellants submit that the Examiner is incorrect to assert that Roberts et al partitions a second type of control The second type of control information information. configured as a pattern. That pattern is not partitioned as the claim requires because the control information that represented by the NBS is not a code word. According to Roberts et al. at column 30, lines 35-37, "[t]he ninth bit signal (NBS) carries a pattern which is updated each frame and repeats every 24 frames."

The Examiner's reliance on the passage in Roberts et al. at column 99, lines 31-39 underscores the flaw in the Examiner's interpretation of that reference. There the reference describes monitoring the ninth bit signals from "all the channels" to establish the ordering of the channels. The information on the channels is transmitted concurrently, not sequentially. parallel transmission of the NBS over multiple channels highlights the difference between Roberts et al. and the claimed invention, which requires the code word to be partitioned among consecutive frames in a multi-frame sequence (the multi-frame sequence defined as the number of frames corresponding to the number of sections into which the claimed second type of control information is partitioned).

Thus, in addition to the established fact that Roberts et al does not contemplate control information as a code word, Roberts et al. does not contemplate partitioning a discrete code word into sections and parsing those sections among a consecutive sequence of frames in a multi-frame sequence that is defined by the number of sections into which the code word is divided. Note that, in *Roberts et al.*, the pattern carried by the NBS is updated every frame. (Col.30 1.36.) Thus, the concept of partitioning a code word among consecutive frames and transmitting the partitioned code word is clearly not taught or suggested by *Roberts et al.*

10.1.2 In their brief, Appellants' argued that the Examiner failed to meet the burden of proof required to make a prima facie case for obviousness based upon the combination of Roberts et al. and Paneth et al. The Examiner answered by arguing that the transmission of control information using the NBS mechanism in Roberts et al. is such that, "[o]nly the definition of control information as code word is lacking in Roberts et al." The Appellants strenuously disagree. Appellants' claimed method for partitioning and transmitting a code word is missing from Again, Roberts et al. does not disclose or Roberts et al. suggest partitioning a discrete code word among consecutive and transmitting it for use downstream transmitting it in the uplink for use in the downlink).

This deficiency in disclosure is not remedied by Paneth et al., which simply does not disclose or suggest partitioning the code word described therein. Thus, in order to make a prima facie case for obviousness when the rejection is based on a combination of references, there must be some suggestion, or motivation in the references themselves (e.g., Roberts et al.) to support the obviousness argument. In re Kahn, 441 F.3d 977. 986 (Fed. Cir. 2006) ("When the Board does not explain the motivation, or the suggestion or teaching, that would have led the skilled artisan at the time of the invention to the claimed combination as a whole, we infer that the Board used hindsight to conclude that the invention was obvious. 'motivation-suggestion-teaching' requirement protects against the entry of hindsight into the obviousness analysis, a problem which § 103 was meant to confront.")(citations omitted) Tn

Appellants' view, the Examiner has not made the requisite showing because the Examiner has not identified what in Roberts et al. would motivate one skilled in the art to transmit a discrete code word as described in Paneth et al. in the manner required by the Appellants' claims. At the time Appellants filed their application, a discrete code word was transmitted as a unit. This is precisely what is taught by Paneth et al. Paneth et al. does not teach or suggest partitioning the code word and parsing it among consecutive frames for transmission. Consequently Paneth et al. does not suggest the partitioning of control information for transmission efficiency and to ensure against (potential) signal loss.

Roberts et al. does not teach or suggest partitioning a code word that is normally transmitted as a unit among a plurality of consecutive frames. The NBS is not a code word; the sequence of NBS bits is not a code word. The NBS information is not partitioned. The NBS information is not "distributed" among consecutive frames. In fact Roberts et al. against the partitioning of a code word since the order of the sequence in Roberts et al. actually carries information. (Col.30 1.35.) Since the order of the NBS sequence carries information and the NBS information is updated with every frame, Appellants submit that Roberts et al. does not suggest partitioning a code word and transmitting it in consecutive frames as required by claim 20. For this reason, Appellants submit that the Examiner has not made a prima facie case that claim 20 is obvious in view of Roberts et al. and Paneth et al.

10.1.3 Contrary to the Appellants' arguments, Examiner believes that Roberts et al. does teach partitioning information into sections of multiple consecutive frames. Examiner relies on those passages of Roberts et al. contemplate updating the pattern conveyed by the NBS each frame. Thus, Roberts et al. contemplates something quite dynamically different from what is disclosed and claimed by Appellants. Appellants contemplate a static code word that is partitioned and distributed among consecutive frames. Roberts et al.

contemplates a dynamic stream of NBS, that collectively defines a pattern that is updated each frame. Appellants submit that the NBS strategy does not teach one skilled in the art to partition a discrete, defined code word into sections and transmit each section in consecutive frames.

The Examiner disagrees with Appellants' argument that Roberts et al. fails to teach partitioning. In support, the Examiner cites column 98, line 62 to column 99, line 1. Appellants observe that the portion of Roberts et al. on which the Examiner relies does not suggest partitioning the Rather, the cited portion information among consecutive frames. merely describes how the NBS information is used downstream There is nothing in Roberts (e.g., for data transmission). that suggests that the NBS information is "reformed" et al. because the NBS is not a discrete set of bits that is partitioned and reassembled as the Examiner seeks to imply. Referring to the portion cited by the Examiner (col.99 1.30 to col.100, 1.21), it is clear that not all of the NBS "bits" have the same type of content. For example, in Table 10, bits 1-6 and 23 and 24 are related to "sync pattern" and bits 7-22 are related to "order number." In the description it states that the ninth bit is monitored "for all channels" to "order the channels." Clearly the "monitoring" of the ninth bit does not constitute a "reforming" as the Examiner represents. Only a portion of NBS is associated with channel the Furthermore, the information is in the NBS bit pattern, not some reassembled word made up of the individual bits assigned to the Thus, the Examiner's position that the ninth bits are "reassembled" (implying that they were previously disassembled) is not supported by Roberts et al.

10.1.5 The Examiner disagrees with the Appellants' position the cited references fail to teach "reforming partitioned second type of control information on receipt of the multiple sections and transmitting each section with a different frame in a multi-frame." In support of this argument the Examiner again references those same portions of Roberts et al.

that the Examiner relied on in support of the Examiner's challenges to the Appellants' arguments in paragraphs 10.1.1 to 10.1.4 above. Again Appellants' note that the NBS sequence in Roberts et al. is not "partitioned" and is not "reassembled" as The NBS conveys its meaning by its the Examiner contends. sequence, not by its meaning in an assembled state vs. unassembled state, as the Examiner seeks to imply.

10.1.6 The Examiner maintains that "Roberts et al. describes partitioning a second type of control information into sections in different ones of a plurality of 24 successive The Examiner cites no frames as required by claim 32." additional support for this position but relies on the citations from Roberts et al. that the Examiner relied upon to support the arguments under paragraph 10.1.1. Again, the Appellants point out that the NBS is not "partitioned" since its sequence is its meaning. The NBS does not have to be reassembled to convey its meaning, since its meaning is discerned by its sequence. This is distinctly different from Appellants' claimed invention, where the "code word" is "partitioned" into sections and "transmitted" in sequential frames, one section per frame.

10.1.7 In response to the Appellant's arguments that Paneth et al. does not describe partitioning of code words, Examiner counters that the claimed feature of partitioning is described in Roberts et al. As previously discussed in detail, Roberts et al. clearly does not describe partitioning a second type of control information because the NBS conveys its information by its sequence. As such, the NBS information is not "partitioned."

In response to the Appellants' arguments that 10.1.8 Paneth et al. does not describe reforming the code word upon receiving it, the Examiner counters that the claimed feature of reforming is described in Roberts et al. As previously discussed in detail, Roberts et al. clearly does not describe reforming a second type of control information because, the control information is not partitioned to form the NBS in the first instance. As such, the NBS information is not "reformed."

II. Appellant's Reply to the Examiner's Answer Regarding Rejection of claims 23, 24, 31, 37 And 38 Under 35 U.S.C. § 103(a) As Being Obvious Over Roberts et al. In View of Paneth et al. And Further In View Of U.S. Patent No. 6,134,220 To Le Strat et al. ("Le Strat et al.")

In response to the Appellants' challenge to the 10.1.9 Examiner's combination of the teachings of Le Strat et al. with the teachings of Roberts et al. and Paneth et al., the Examiner states that it would have been obvious to one skilled in the art to substitute the coding mode information for the downlink for the first type of control information described in Roberts With regard to the claimed second type of control that Le Strat et al. information. the Examiner observes identifies the base transceiver station as selecting the coding mode for the uplink (from the mobile to the base station) and then communicates this to the base station. The Examiner infers from Le Strat et al's description at column 1, lines 20-22 of the TDMA technique and the statements at column 10, lines 63-64 that the "quality level is determined regularly." The Examiner goes on to infer that if the quality measurement is made once every n frames, then the coding mode for the mobile station can be changed only once every n frames. The Examiner then further infers from Le Strat et al's general statement that, in the context of changing the transmission mode, a change to a mode that uses fewer transmission resources is effected if coding modes consuming less resources are selected in both directions. Never mind that this general statement (Col.5 11.20-25.) regarding the consumption of resources is directed to the coding mode selected and not the code word used to specify the coding mode, the fact is that Le Strat et al. does not expressly or implicitly suggest partitioning a code word between consecutive frames of a multi-frame sequence in order transmission resources or indeed for any other reason.

The Examiner takes the position that one skilled in the art would modify the method of Roberts et al. and Paneth et al. with the method of Le Strat et al. (by substituting in the second type of control information in Le Strat et al. for the NBS in

Roberts et al) The Examiner selects as motivation for this selection Le Strat et al's alleged suggestion to minimize the resources required to transmit the coding mode selected from the transceiver to the base station. As noted above, Le Strat et al. is referring to conservation of the resources required by the coding mode and not the resources required to transmit the word specifying the coding mode.

Contrary to the Examiner's position, there is nothing in Le Strat et al. that would cause one to substitute the word specifying the coding mode used in the uplink as the NBS in Like Paneth et al., Le Strat et al. does not Roberts et al. teach partitioning a code word into sections and distributing those sections among consecutive frames in a multi-frame sequence. There is nothing in Le Strat et al. or Roberts et al. that would motivate one skilled in the art to combine these references in the manner taught by the Examiner.

The Examiner purports to provide additional 10.1.10 explanation regarding why one skilled in the substitute the coding mode/indications of transmission quality in Le Strat et al. for the control information/NBS information described in Roberts et al. However, the rationale for the combination essentially repeats the arguments made Examiner that are addressed in paragraph 10.1.9 above.

The Examiners argument is based upon layers of conjecture. In the first layer, the Examiner infers that Le Strat et al. contemplates that the mobile station will transmit, with each frame, the coding mode used with each frame to the base station. The Examiner builds on this inference to conclude that "one skilled in the art would substitute the coding mode in Le Strat et al. for the control information described in Roberts et al." Secondly, the Examiner infers from the fact that Le Strat et al. employs TDMA that the frames are divided into time slots, from which the Examiner further infers that the quality measurements in Le Strat et al. are made at intervals of frame times. Examiner then references the statement in Le Strat et al. regarding the general desirability of limiting "the quantity of

resources allocated in each transmission direction" to conclude that Le Strat et al. teaches one of "ordinary skill in the art to substitute the transmission quality information in Le Strat et al. for the NBS information described in Roberts et al."

Again the Appellants submit that the Examiner has not made a prima facie case of obviousness. The Examiner's arguments are based upon inferences the Examiner derives from Le Strat et al. that are devoid of suggestion that the transmission quality information in Le Strat et al. be substituted for the NBS information in Roberts et al. "The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art." Ormco Corp. v. Align Tech., Inc., 463 F.3d 1299, 1308 (Fed. Cir. 2006) (citing In re Kahn, 441 F.3d at 987-88 (quoting In re Kotzab, 217 F.3d 1365, 1370 (Fed. Cir. 2000))). Le Strat et al. does not fairly teach partitioning a code word that is a control information into second type of transmitting those sections in consecutive frames of a sequence of frames.

10.1.11 The Examiner's comments in this paragraph address the Appellants' arguments with regard to the rejection of Specifically, Appellants argued that the Examiner failed to explain what in the references themselves would teach one skilled in the art to substitute the coding mode in Le Strat et al. for the control information/ninth bit signaling in In response to Appellants' challenge, Roberts et al. Examiner referenced the arguments in paragraphs 10.1.1, 10.1.9, and 10.1.10 and without further argument. The Appellants restate their position that the arguments in paragraphs 10.1.1, 10.1.9 and 10.1.10 fail to prima facie establish that the claimed invention, as recited in claim 29, is obvious. the Examiner has improperly equated the NBS information in Roberts et al. with the claimed code word. The claimed steps of partitioning and reforming a discrete code word are not disclosed or suggested in Roberts et al. The use of discrete code words by Paneth et al. and Le Strat et al. do not suggest to one skilled in the art to partition those code words into sections and transmit them in consecutive frames of a multi-frame sequence. Le Strat et al's general statements suggesting the need to conserve transmission resources do not suggest partitioning and reforming the discrete code word that is the second type of control information in the manner required by Appellants' claim 29.

10.1.12 The Examiner agrees with Appellants that Le Strat et al. does not disclose or suggest partitioning a code word into sections and distributing those sections into consecutive frames of a multi-frame sequence. Again, the Examiner relies upon the disclosure in Roberts et al. regarding the NBS bit for the argument that partitioning discrete code words, such as those contemplated by Le Strat et al., in the claimed manner, is obvious. However, as Appellants have repeatedly noted, the NBS information in Roberts et al. is not a discrete code word, but a sequence of bits that carries information based upon the sequence. As such, the information is not partitioned and reformed as required by the claim.

10.1.13 In its brief, Appellants challenged Examiner's disregard of the substantial differences between the system in Roberts et al. (exclusively fixed devices) and the system in Le Strat et al. (fixed and mobile devices). Examiner dismissed this challenge by stating that it would be straightforward for one skilled in the art at the time of the invention to correlate the telephone signal transmission system et al. and Paneth et al. with the mobile of Roberts communication system of Le Strat et al. The Examiner's position ignores the substantial differences between the mobile and fixed Appellants submit that the fact that the mobile unit moves with respect to the base unit creates a fundamentally different communication paradigm requiring a different strategy for communicating control information. The Examiner has failed to explain how or why one skilled in the art would make the modifications to the NBS technique in Roberts et al. to adapt it

to work in the claimed manner for a mobile communication system. Appellants claim a different technique from Roberts et al. (i.e., partitioned discrete code word v. NBS) in a different environment (mobile v. fixed). For this reason, Appellants continue to challenge the Examiner's combination of Roberts et al. in view of Le Strat et al. in support of the obviousness rejection of Appellants' claims.

III. Appellants' Reply To The Examiner's Rejection Of Claims 26-28 As Obvious Under 35 U.S.C. § 103(a) Over Roberts et al. In View Of Paneth et al. And Further In View Of U.S. Patent No. 5,199,031 To Dahlin et al. ("Dahlin et al.")

10.1.14 In response to the Appellants' observation that the Dahlin et al. reference does not disclose or suggest partitioning the control information (e.g., the forward access control channel (FACCH) the Examiner replies that Roberts et al. discloses partitioning. Appellants disagree. The Roberts et al. NBS technique transmits a sequence of bits that conveys information based on its sequence; Roberts et al. does not obtain the NBS by partitioning a discrete code word. It is for this reason that Appellants maintain that their claimed invention in not obvious in view of Roberts et al. in view of Dahlin et al.

10.1.15 In its Brief the Appellants argued that the cited combination of references (i.e., Dahlin et al. along with Paneth et al. and Roberts et al.) fails to teach "frame formatting and the channel coded first tvpe information, data and section of the second type of information" the context of a second type of control information partitioned into sections as required by Appellants' claims. In reply, the Examiner cites to specific portions of Roberts et al. that refer generally to: "the transport of telephony (i.e., the HFC (hybrid and control information over fiber-coaxial) network" and "the telephony payload channels and IOC channels of the 6 MHz band are interspersed . . . " and argues that this passage supports combining Dahlin et al. with Roberts et al. While Roberts et al. suggests interspersing telephony payload channels and IOC channels, Roberts et al. does not teach or suggest partitioning a code word into sections and transmitting the sections in consecutive frames as required by Appellants' claims. Since Roberts et al. does not teach or suggest the claimed partitioning, Roberts et al. and Dahlin et al. combined, cannot be said to teach interleaving a first type of control information with a section of partitioned second type of control information.

IV. Appellants' Reply To The Examiner's Answer Regarding The Rejection Of Claims 30 And 35 Under 35 U.S.C. § 103(a) Over Roberts et al. In View Of Paneth et al. And Further In View Of U.S. Patent No. 6,35,460 To Wan ("Wan")

The Examiner acknowledges that Wan does 10.1.16 disclose or suggest partitioning a code word into sections and distributing that code word among consecutive frames of a multi-frame for transmission. The Examiner states that such partitioning is described in Roberts et al. The Appellants again observe that the NBS strategy in Roberts et al. does not include partitioning or reforming a code word. The NBS technique conveys a sequence of bits that conveys information by It is not a discrete "word" virtue of its sequence. information that is partitioned for transmission. this reason that Appellants submit that its claims are not obvious in view of the combination of Roberts et al. and Wan.

10.1.17 The Examiner states that claim 35 "does require reforming a code word that has been sectioned among consecutive frames and transmitted." Appellants disagree. Claim 35 depends from claim 34. Claim 34 recites a receiver that reforms а code word partitioned into sections transmitted by the claimed first device. The claimed first device partitions the code word into sections and transmits the sections via consecutive frames in a multi-frame sequence. Accordingly, claim 35 does require reforming the code word in the manner set forth by Appellants.

The Examiner further states that Roberts et al. contemplates reforming a code word that has been sectioned and

transmitted in consecutive frames in a multi-frame sequence. Again, the Appellants disagree. The NBS in Roberts et al. is a multi-bit sequence that is not reformed. Its meaning is derived from its sequence, which repeats. The NBS in Roberts et al. is not a code word that is either partitioned or reformed as required by Appellants' claims.

Examiner contends, and Appellants agree, that teaches decoding received frames of a multi-frame sequence. Examiner also contends that Wan contemplates that each frame has a section of a code word. The Examiner cites column 6. lines 20-23 of Wan to support this view. The cited portion of the frequency correction channel and describes synchronization channel. There is nothing in the cited portion of Wan that contemplates partitioning code words into sections. Wan clearly does not teach or suggest partitioning a code word and distributing sections of the code word among consecutive frames of a multi-frame sequence.

In response to the Appellants' argument that 10.1.18 Roberts et al., Paneth et al. and Wan do not expressly teach using a reformed code word (previously partitioned) to encode frames for transmission as set forth in claim 36, the Examiner states the Le Strat et al. teaches that the encoding means uses a code mode based upon a reformed code word. This is not The Examiner clearly appreciates in paragraph 10.1.9 that Le Strat et al. does not expressly teach partitioning, reforming and using a code word. The Examiner's appreciation of this fact is demonstrated by the Examiner's reliance on the disclosure of NBS in Roberts et al. in combination with Le Strat et al. to reject claim 36. Again, the Examiner's reliance on Roberts et al. for this purpose is misplaced. As Appellants have stated repeatedly, the NBS technique of Roberts et al. is not the claimed partitioning and reforming of a discrete code word claimed by Appellants. Among the other references cited by the Examiner, none contemplates partitioning a discrete "word" of information and parsing it among multiple consecutive frames in a multi-frame sequence for transmission. Consequently, the

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cited references, either alone or in combination, do not render obvious the invention that is subject of the claims on appeal.

For the foregoing reasons Appellants submit that the Examiner has not made a prima facie showing that Appellants' claims are obvious in view of the cited references. Favorable action by the Board, including reversal of all rejections made by the Examiner, is earnestly solicited.

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CONCLUSION

For the reasons set forth above, this Honorable Board should reverse the rejection as to all claims on appeal.

Dated: April 23, 2007

Respectfully submitted,

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